

With a length of 7", the black **Great Crested Newt** is the largest indigenous newt and resembles a water dragon. Especially during courtship, the male with its high crest and white spots is very ostentatious.

Because Great Crested Newts

– as all newts – are active at twilight and at night, it takes some luck to spot them.



The **Common Treefrog** is the troubadour among frogs. At dusk and during the nights from April to June, his loud call can be heard for several miles. When calling, his vocal sac becomes visible, like a chewing gum bubble. The Treefrog's back is leaf

green and separated from its white under belly by a black band. For climbing in copses



near the water, the Treefrog uses adhesive pads on his toes. Treefrogs have become very rare in Hesse, for lack of suitable water habitats with vegetation suitable for the frogs. Training Areas are important retreats for Treefrogs.

As a thermophilic pioneer species, the **Yellow-bellied Toad** needs exactly the kind of small, shallow, sunny ponds, car tracks, or puddles that abound on Training Areas. It is able to quickly take advantage of heavy rainfalls and settle in shallow, rain-filled depressions free of vegetation and therefore free of competing species and predators. The Yellow-bellied Toad is rather small (up to 2.5"), has a greenish, warty back, and its underside shows a characteristic pattern of connected yellow or orange spots. This toad's low and musical calls "poop...poop...poop" are hard to locate. Yellow-bellied Toads can reach an age of 20 years!



Conduct on the premises:

- ! Amphibians are protected animals in Germany. Disturbing or capturing them is forbidden.
- ! Do not walk or drive through shallow ponds in the months of April – July!
- ! Do not pick or destroy vegetation and cane at watersides!



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Resources



Military Training Areas are characterized by a lack of agricultural use and, as a result, contain areas that are mostly undisturbed.

The training of heavy machinery creates a network of interconnected biotopes.

Rare in Germany are the many ponds and pools that provide habitats for endangered species of **amphibians**.



Amphibians



Amphibians

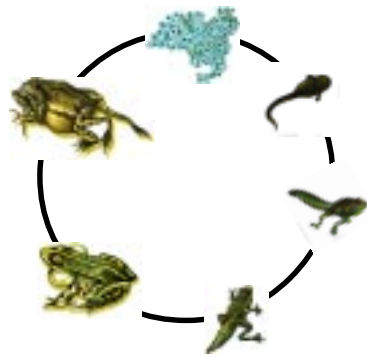


Amphibians



Amphibians can be best observed in spring and summer, due to their larvae's water-bound development. Adult animals are largely independent of the water and only return during the mating season.

Then, amphibians find suitable bodies of water to deposit their eggs. From these, tadpoles hatch, adapted to an aquatic existence by their tail fin and gills. They stay in the water until the metamorphosis into an adult animal with legs and lungs is completed. The adults depart from the spawning grounds and do not return until the mating season begins next spring. The rest of the time, amphibians stay hidden on land, in woods and groves, bushes and gardens. There, they are safe from predators and enjoy suitable microclimates, protecting the amphibians from too much heat in summer and frost in winter.



At the Training Area *Hohe Warte*, the **Natterjack Toad** finds open areas of sparse vegetation offering hiding-places as well as largely vegetation-free spawning waters (such as car tracks, water-filled holes in bare ground, etc). Natterjack Toads are 2 – 3" long, with dry, warty, mottled

brown skin. Because of their short hind legs, Natterjack Toads do not leap but walk briskly, like a mouse. During the mating season, the male toads' call can be heard, like a chorus, for more than a mile.

Fire Salamanders are shiny black with eye-catching yellow and orange spots or stripes on their backs.



Their courtship takes place on land from July to October.

Fire Salamander larvae develop inside the female's body for about 8 months, then the mother deposits the 8 to 60 larvae in cold, shaded creeks rich in oxygen.

The endangered **Midwife Toad** has been



found at the Butzbach and Friedberg Training Areas. Its warty skin and short hind legs are reminis-

cent of a Common Toad, as is the brown or grey coloring with dark spots. One distinguishing feature is the Midwife Toad's vertical pupil. This small, outwardly



unimposing anuran is also called "Bell-frog" because of its call: a chorus of Midwife Toads sounds like chiming bells.

The Midwife Toad is the only anuran in Central Europe that does not spawn in water. The animals call and mate on land. The male toad winds the egg strings around its hind legs and carries them for 3 to 6 weeks, until the tadpoles hatch.



Amphibians



Amphibians



Amphibians





On shallow soil, in dry and barren locations, **rough meadows, fringes**, or **ruderal meadows** can develop. These are marked by very high solar radiation, extreme temperatures, and plants adapted to these environments, like Deptford Pink, Eyebright, Fairy Flax, and Milkwort. The flowers are striking, and accompanied by numerous rare insects. Of the 104 butterfly species native to Hesse, 85 can be found on rough meadows. Among the grasshopper species found on Training Areas are Wart Biters and Blue-Winged Grasshoppers, which are extremely rare in Hesse.



Bioto pes

Even **raw soil** without vegetation, and subjected to a lot of traffic presents habitats to highly specialized species. Graveled areas for example serve as nesting sites for the well-camouflaged Little Ringed Plover.



Conduct on the premises:

- ! Do not walk or drive through shallow ponds in the months of April – July!
- ! Do not pick or destroy vegetation and cane at watersides!
- ! Do not walk or drive on rough meadows!

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Bioto pes



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Use of heavy machinery creates a network of interconnected **biotopes** which provide habitats and retreats for many endangered species of plants and animals.

Bioto pes



Brown are found here, and last but not least the presence of birds such as Red-backed Shrikes, Common Stonechats, and Woodlarks, documents the importance of these high-dynamics areas.



The shifting of soil creates diverse structures, such as areas with sparse vegetation, exposed to the sun, or shallow bodies of water. Some fastidious species benefit from the diversity of microstructures (stones, piles of rubble, logs, smallest caves, etc). Amphibians such as Midwife and Natterjack Toads, and Palmate Newts use these areas. The fact that rare animals such as Mottled and Blue-winged Grasshoppers, and butterflies like Poplar Admirals and Wall

Shallow, sunny **pools** are first settled by pioneer species among the amphibians, such as Natterjack Toad or Yellow-bellied Toad.

Deeper areas with aquatic vegetation and cane along the shores house Crested Newts and Treefrogs, as well as rare and endangered dragonfly species, water-beetles and snails.

Groves can be found on Training Areas in small exposed clusters or close to the woods, encompassing varying ages and types of vegetation.

The species bound to these habitats are remarkable: Green Hairstreak and Pearly Heath, Common Lizard, Red-backed Shrike and Common Stonechat, Turtle dove and Common Whitethroat.



Biotores



Biotores



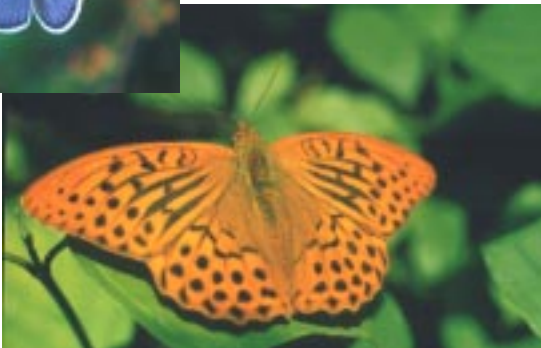
Biotores



Butterflies



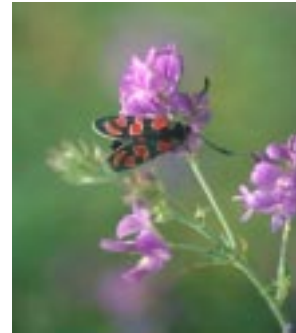
Most **butterfly** caterpillars depend on a few specific plants, for example the Swallowtail's caterpillars which need Queen Anne's lace in dry areas or Cambridge Milk Parsley in wet locations. The Silver-washed Fritillary is one of the largest native butterflies and



Insects

lives almost exclusively at the edge of woods. For egg deposition, these butterflies need Russian Violets growing there. They feed on nectar from thistles growing in glades.

Another interesting species to be found on Training Areas is the **Six-spot Burnet moth**, which defends itself by spraying predators with hydrogen cyanide. The red markings on the wings warn predators, so that these moths are not eaten.



Conduct the Premises:

- ! Preserve fringes rich in flowers!
- ! Do not litter! Empty bottles or cans can become traps for endangered insects!

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Insects

Locusts

The species of **locusts** is divided into **bush crickets**, which are mostly green and live a predatory life in shrubberies and close to the forest's edge; **crickets**; and the herbivorous **common grasshoppers**, which are mostly brown and live on the ground in low vegetation. All locust species are capable of producing varying sounds. Meager, sun-exposed locations on the Training Areas are



predominantly lives in the Mediterranean, vineyards, and sandy areas in Southern Europe. Wartbiters and Two-colored bush crickets are grasshoppers that can be found on poor grasslands, with Training Areas constituting one of the few habitats outside the mountainous regions of Central Hesse.

Dragonflies are the master fliers amongst insects. Their aerial existence lasts for only two months.



During this time – between May and October – dragonflies can be observed mating and depositing eggs near bodies of water. Most of their lives, in some cases several years, is spent as predatory larvae in ponds and pools. Dragonflies are predators, but have no sting and are **completely harmless** for humans! A small dragonfly found near flowing waters is the Banded Demoiselle. The red, autumnal Ruddy Darters live near ponds rich in vegetation and love open areas to bask in the sun.



one of the best habitats in Central Hesse for the Blue-winged grasshopper, a rare species that

Insects

Insects

Insects

Situated in the woodland between Friedberg, Rosbach and Ober-Mörlen is an American Armed Forces Training Area of approximately 38 km² acres. This area contains several prehistoric burial mounds, as well as a 4.7 mile stretch of the Limes, with the remains of fort *Kaspeburg* and the smaller forts *Ockstätter Wald* and *Kaisergrube*, as well as numerous watchtowers. Among these, the area *Im Friedberger Burgwald Winterstein* is the most notable, for it encompasses the remains of three watchtowers situated on a prominent bend in the Limes.



Outstanding efforts by the US Army led to better preservation of prehistoric and Roman monuments within the Training Area. The

Marker ("Seibert Stake")



View of the Limes, 200 A.D., with palisade, trench and rampart in front of a stone tower. Reconstruction, drawing according to D. Baatz.

monuments were included into topographical maps used by the Army, and identified on site with the use of markers ("Seibert Stakes").

Conduct on the premises

- ! No digging in the Limes area!
- ! No driving over Limes remains!
- ! Heed Seibert Stakes and similar markings!

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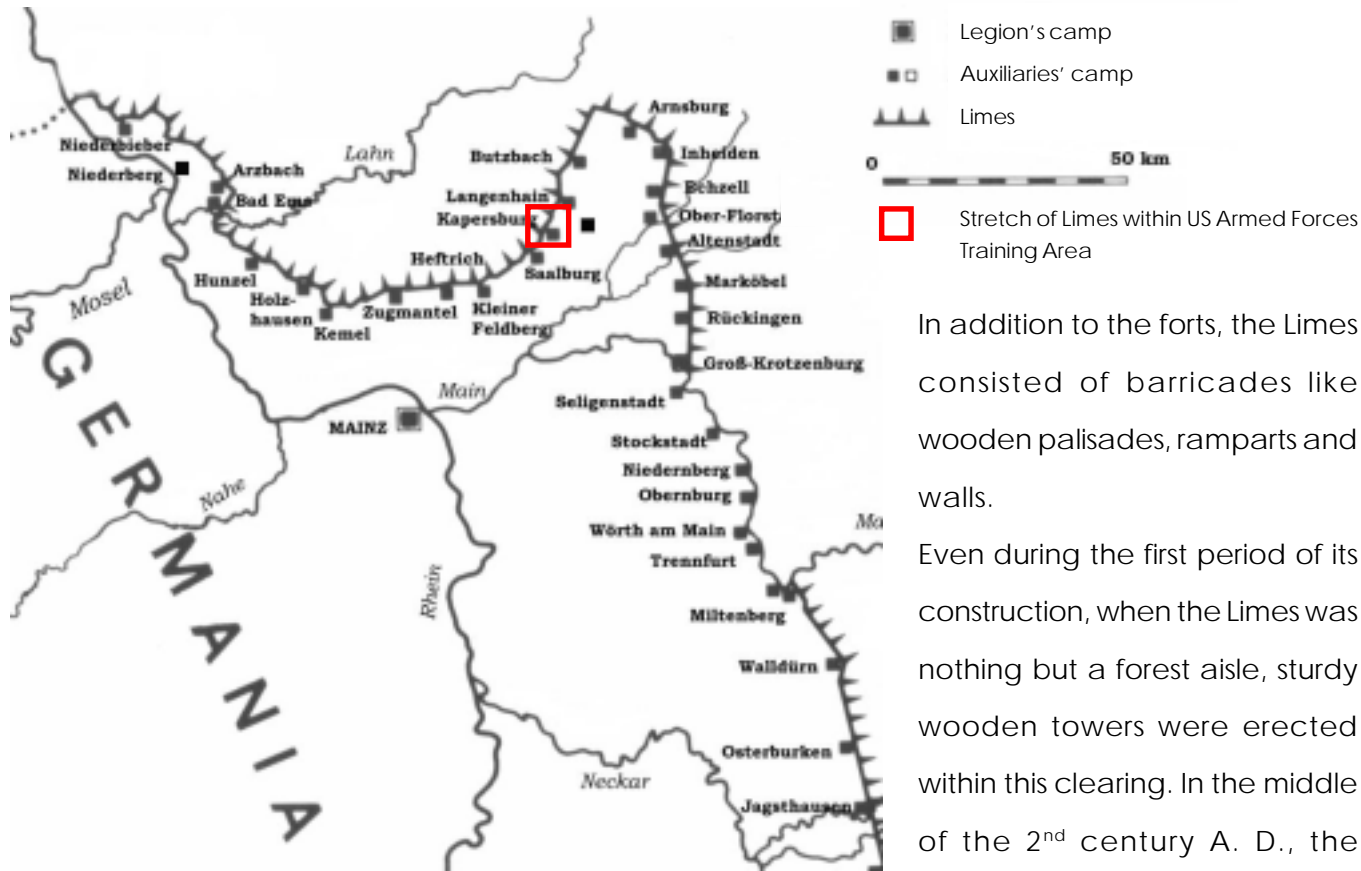
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In the woodland between **Friedberg**, **Rosbach**, and **Ober-Mörlen**, these circumstances lead to the **Wetterau-Limes** being in especially good condition where it runs through the grounds of the American Forces Training area.

Limes

Limes

Limes



Between the rivers Rhine and Danube, the **Roman Limes**, the fortified frontier of the Roman Empire, separated the Germanic tribes from the Romans. Along its length of 342 miles, the Roman Military maintained 60 large forts such as the *Saalburg*, many smaller forts and about 900 watchtowers from the end of the 1st century A. D. up into the second half of the 3rd century.

Limes



Watchtower on *Schrenzerberg*, near Butzbach, rebuilt in historically correct wood and loam architecture

dilapidated wooden structures were replaced by massive and durable stone towers.



Due to agriculture and settlement, little of these fortifications are visible today. In the woods near Langgöns, for example, the last remnant of the Limes consists of nothing but an overgrown pile of rubble.



Limes



Despite its slight size (about 5"), the **Woodlark** is a mighty singer. Day and night, from April to June she circles in the sky, singing her simple but delightful song. If you can hear the persistent flute-like lu-lu-lu-lu-lu, you must be in an area of varied habitats.

With her pale eye-stripes and mottled back plumage, the Woodlark is a pretty bird when seen up close. This ground-breeding bird prefers forest edges near diversified, open country with scattered trees. In central Hesse, the Woodlark lives on Training Areas almost exclusively, which makes the locations in Butzbach and Friedberg so vital for the preservation of the Woodlark.

The **Red-backed Shrike** is the musketeer among birds. Despite his small size (this songbird measures just under 7"), this handsome bird with black mask



and red back overpowers even small mice and carries them into briars. There, the Red-backed Shrike impales them on thorns, to serve as food in lean times. Mostly, he preys on large insects on the ground from overhead lines and groves.

Conduct on the premises:

- ! Do not stay long in the presence of agitated and warning birds!
- ! Do not touch chicks or fledglings, do not take them away!
- ! Be considerate of ground-breeding birds from April to July!



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Use of heavy machinery creates a network of interconnected biotopes which provide habitats and retreats for many endangered species of **birds**.

Birds

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With his black wispy crest and black throat and the wide, dark wings and their white tips, the **Northern Lapwing** is the clown and aerial acrobat among the birds. He sounds his loud "pee-wit" during his breakneck nuptial flights over the open grasslands in March and April as well as in May and June, when he nosedives in hard attacks to drive possible enemies, such as carrion crows and buzzards, away from his young. He can be found on Training Areas if sufficient low grasslands, areas of open soil, and puddles are available. The Northern Lapwing has been sighted in the Wieseck floodplain, where it is part of the Giessen Depot, and, in some years, on the Training Area *Hohe Warte*.

The **Little Ringed Plover** with his brownish color, the black necklace, and the dark mask is well adapted to his habitat of wide, open, often graveled areas (formerly on the gravel-banks of some rivers). His camouflage is only outdone by

the camouflage coloring of his eggs which are indistinguishable from the ground they are laid on, even from a few feet away. As a last resort in defending the nest, the adults make a giant racket. They pretend to be injured, cheeping piteously and flutter ostensibly helpless to lure the predator away from the eggs or the equally well-camouflaged squabs.



Whinchats are accomplished vocalists, chattering and telling stories while sitting on a fencepost or branch close to wet grasslands. Different areas even have veritable "hit lists" which change from year to year; the best singer wins the best females. Regrettably, the species has



declined strongly, because wet, meager and yet open areas are becoming more and more rare. Training Areas supply the Whinchat with small corners that can be settled, for example in Butzbach.

An even rarer bird with specific demands on habitats is the **Northern Wheatear**. He is very agitated, and as soon as someone comes near his nest, he warns ceaselessly with a sharp "tchack" or a coarse piping "heet". Wheatears are ground-dwellers that live in open, stony areas such as rubble heaps, graveled areas etc. In Hesse, they can be found in quarries and on Training Areas. On the Wieseck Floodplains, up to three breeding couples have been observed.



B i r d s

B i r d s

B i r d s

Just as striking from a floristic point of view are the largely **silted ponds**, some of which have comple-



Bidens cernuus – Nodding Beggar-ticks

ted the suc-
cession into a marsh area. The rare Nodding Beggar-ticks can be found on the banks of still, muddy pools on the Butzbach Training Area. Large areas of Centaury make wet dells riddled with gaps on the Friedberg Training Area special.

The rifle range on the Butzbach Training Area is ad-
joined by an interesting **meager meadow** on which 74 different species of plants, among them several orchids, have been found. Circumstan-



Dactylorhiza majalis – Broad-leaved marsh orchid

ces in this location change every few feet, so that biodiversity is high, and many plants with vastly differing ecological needs



Euphrasia stricta – Eyebright



Platanthera bifolia – Lesser Butterfly-orchid

coexist. Spotted Orchid, Lesser Butterfly-orchid and Eyebright all can be found there.

Conduct on the Premises

- ! Preserve fringes rich in flowers!
- ! Do not pick orchids or other protected plants!
- ! Do not litter!



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Military Training Areas are characterized by a lack of agricultural use and, as a result, contain areas that are mostly undisturbed.

Use of heavy machinery creates a network of interconnected biotopes which provide habitats and retreats for many remarkable and endangered species of **plants**.

Plants

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The reason for the floristic biodiversity and the occurrence of remarkable species on Training Areas is the continuous or episodic wounding of the soil due to training with heavy machinery. Annual pioneering plants, certain

colonization. In the rough meadows which can form on dry, shallow soil, species adapted to exposure to the sun and extreme temperatures can be found. Typical plants in these locations are Fairy flax and Milkwort,

which abound on the heath-like forest edges on the Friedberg Training Area. The occurrence of various heat-loving species of Hawkweed in the open quarry on the Friedberg Area is interesting.

Salvia pratensis – Eng Salvie



shrubs, and annual herbs especially profit from the chance of



Linum catharticum – Fairy flax



Polygala vulgaris – Milkwort



Hieracium spec. – Hawkweed

Plants

Plants

Plants